XXIV.—*On* Flustra marginata *of Krauss and an allied Species, forming a new Genus* (Flustramorpha) *of* Escharidæ, *from Natal.* By Dr. J. E. Gray, F.R.S. &c.

In the collection of corallines containing a few seaweeds, especially the one described in the August number of the 'Annals,' received some years ago from Port Natal as a present from Colonel Bolton, I observe several specimens of the *Flustra marginata* described by Dr. Krauss in his 'Corallines and Zoophytes of the South Sea,' p. 35, tab. 1. fig. 3. The figure of this coralline has always been a matter of curiosity to me; and therefore it was with great pleasure that I found several specimens of this and an allied species in the collection. Their formations are very peculiar, having the frond-like form of a *Flustra*, but supported by horny, often inosculating fibres, that margin the frond and also traverse it in various directions so as to break it into several sections, as is well represented in Krauss's figure. One might be inclined, as it often grows among the dead denuded stems of zoophytes, to believe that those zoophytes formed the margin of the frond; but a study of numerous specimens has convinced me that this cannot be the case; for the thickened horny margins do not stand out from the ends of the fronds, as they would do if they were the denuded stems of other species, but they are evidently developed on the edge and across the frond as the frond grows.

The substance of the coral is calcareous and exactly like those of *Lepralia* and *Eschara*; and it forms a frond with a series of cells on each side like the latter genus. The fronds are expanded, repeatedly and furcately branched like the common *Flustra*, but they are known from that genus by the cells being much more calcareous and covered with a calcareous coat. The two species have a general external resemblance to the two common European Flustras *F. foliacea* and *F. truncata*; I therefore propose to call the genus *Flustramorpha*.

Krauss, when describing *Flustra marginata*, observes that "perhaps it may become the type of a separate genus on account of the thickened edges, which, standing out from the calcareous structure, border the two margins of the frond. Where the frond divides, the thickened edge of the upper margin turns across it; and consequently it appears that the growth of the branch is continuous; but here a pause occurs, during which the thickened margin is forming, which after a time constitutes the foundation of a new lobe. These cross lines show the different epochs of growth, like the varices on *Murices* and *Cassidæ* and other genera of shells.

"These thickened ribs give the strength and firmness which

are necessary to support the extremely fine and brittle cell-structure of the frond. The whole zoophyte can therefore only be dried and preserved with great care; but if it dies in the sea the calcareous matter soon after death dissolves in the sea-water, and, instead of the stiff light bluish grey-brown zoophyte, one only finds a pale brown, horny, shining skeleton with more transparent cells; a similar skeleton may be obtained by placing a frond in very weak acid. The ribs of the frond are then visible; and one recognizes on these teeth the points by which the bordering seam is connected with it."

Dr. Krauss describes both sides of the frond as covered with blunt rhomboidal cells; "at the upper end of each cell is a rounded, four-cornered, untoothed, oblique oral opening, and on the side of the opening there is a small circular anal aperture. This second opening is always directed sideways towards the edge of the frond; that is to say, if a perpendicular line is drawn from the middle of the frond, it is found to be on the right side of the line on the right side, and on the left of it on the left side of the oral aperture. Immediately below the oral aperture is to be observed a second, very small opening, the use of which is not known." Similar openings are to be seen in several species of *Lepralia*.

It is curious that Dr. Krauss, who observes so accurately the structure of the cell, did not see that the coralline was much more closely allied to *Eschara* and *Lepralia* than to *Flustra*.

The other species is perhaps described by Mr. Busk as *Eschara*; but he does not mention the margin or divisions.

Fam. **Escharidæ**.

Genus Flustramorpha.

Polyzoarium frondose, flabellate, furcately divided; cells disposed on both surfaces back to back, immersed, coalescent, parallel to the plane of the axis. Oral opening with a small tubular opening on one side of it and a smaller aperture beneath. The frond supported by cylindrical horny fibres, which traverse it in various directions and edge the two margins of the lobes.

1. *Flustramorpha marginata.* B.M.

The polyzoarium grey-brown, rather thin; the stem and branches strap-shaped, with nearly parallel sides, regularly furcately branched, and margined with a thickened rib.

Flustra marginata, Krauss, Beitr. Corall. und Zooph. der Südsee, 1837, p. 35, tab. 1. figs. 3 *a–d*.

Hab. Port Natal.

2. *Flustramorpha flabellaris.* B.M.

The polyzoarium pale reddish brown; the frond widening upwards, rather irregular; the terminal lobes broad, fan-shaped or irregular, much broader at the end.

Eschara flabellaris, Busk, Cat. of Marine Polyzoa, ii. p. 91, tab. 107. figs. 7, 8, 9, 10.

Hab. Port Natal.

This species much resembles *Flustra marginata* in external appearance, but is much more calcareous and supported by marginal and transverse horny ribs, which are stouter but do not form such a regular margin to the frond as in the other species; and the frond is broader, and more irregularly divided, the terminal lobes being very irregular in shape, very unlike the regular strap-shaped furcate fronds of the former species.

Mr. Busk, to whom I had sent a small specimen of this species, informs me that it is the one he described and figured in the 'Catalogue of Marine Polyzoa' under the name of *Eschara flabellaris*; but in neither the figure nor description is there any mention of the lobes being divided and supported by a cartilaginous margin; in other respects the figure is a very good representation.

XXV.—*A Cuvierian Principle in Palæontology, tested by evidences of an extinct Leonine Marsupial* (Thylacoleo carnifex), *by* Professor Owen, F.R.S., D.C.L., Foreign Associate of the Institute of France. Reviewed by Gerard Krefft, F.L.S., C.M.Z.S., M.F.D.H., &c.*

[Plates XI. & XII.]

Professor Owen spoke boldly when he thus headed his last treatise on the Extinct Mammals of Australia,—too boldly, in fact—because if the "Cuvierian Principle in Palæontology" is once found wanting, it must be reduced in value ever afterwards. The founder of a science is not always able to provide at first for all the exigencies which may arise out of a careful investigation of his system; and the worship of learned men may go a little too far. It is right to love the master who taught us, and I admire Professor Owen on that account; but when anatomists like Flower, Falconer, and Huxley differ from Cuvier as they differ from Buffon and Linnæus, Professor Owen will probably reconsider his verdict and make the *amende honorable*. Cuvier and his principles cannot always be depended on in the classification of Australian fossils; and

* From the 'Sydney Mail,' May 18, 1872, with corrections and the illustrations communicated by the Author.